

**Montana Board of Oil and Gas Conservation  
Environmental Assessment**

**Operator:** Cirque Resources LP  
**Well Name/Number:** Lightner Creek 18-3H  
**Location:** NE NW Section 18 T14N R29E  
**County:** Petroleum, **MT;** **Field (or Wildcat)** W/C

**Air Quality**

(possible concerns)

Long drilling time: No, 12 to 16 days drilling time.

Unusually deep drilling (high horsepower rig): No, a triple drilling rig to drill to 8417' MD/3786' TVD.

Possible H<sub>2</sub>S gas production: Slight H<sub>2</sub>S possible.

In/near Class I air quality area: No class I air quality area.

Air quality permit for flaring/venting (if productive) Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: No special concerns – using triple drilling rig to drill to 8417' MD/3786' TVD.

**Water Quality**

(possible concerns)

Salt/oil based mud: No, surface hole will be drilled with freshwater. Mainhole will be drilled with freshwater and freshwater drilling mud.

High water table: Possible high water table in the area of review.

Surface drainage leads to live water: No, closest drainage is Box Elder Creek, about 1/32 of a mile to the north of this location.

Water well contamination: No, nearest water wells are about 1/32 of a mile to the east, 1/4 of a mile to the southwest, 1/2 of a mile to the south southeast and 5/8 of a mile to the northeast from this location. Depth of these water wells are 105', 110', 130' and 277'.

This well will set 13 1/2" surface casing to 500' and cement to surface. Well will be drilled with freshwater mud to 8417' MD/3786' TVD, into the Heath formation.

Porous/permeable soils: No, silty sandy bentonitic soils.

Class I stream drainage: No Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: \_\_\_\_\_

Comments: 500' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud system to be used on surface hole.

Freshwater mud system to be used from 500' to 8417'MD/3786'TVD. Freshwater drilled cuttings and mud solids will be buried in the lined pit. Lined pit will be backfilled when dry. No concerns.

### **Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings: No stream crossings require.

High erosion potential: No, small cut, up to 1.0' and small fill, up to 1.6', required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, 400'X310' location size required.

Damage to improvements: Slight, surface use is a irrigated field.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be from existing county road. Short road to be built from trail access into location, about 6164', same access road as the Lightner Creek 18-3.

Freshwater drilled cuttings and mud solids will be buried in the lined pit. Lined pit will be backfilled when dry. No concerns.

### **Health Hazards/Noise**

(possible concerns)

Proximity to public facilities/residences: Residences, farm place just to the east of this location and 1 mile to the southwest from this location.

Possibility of H<sub>2</sub>S: Yes, possible.

Size of rig/length of drilling time: Triple derrick drilling rig, about 20 to 30 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H<sub>2</sub>S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Operational BOP and adequate surface casing should mitigate any problems. No concerns.

### **Wildlife/recreation**

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Threatened or endangered species identified are the Pallid Sturgeon and the Black Footed Ferret. Candidate species is the Greater Sage Grouse. Proposed species is the Mountain Plover.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: \_\_\_\_\_

Comments: Private irrigated surface lands. No concerns.

### **Historical/Cultural/Paleontological**

(possible concerns)

Proximity to known sites None identified

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: \_\_\_\_\_

Comments: Private irrigated surface lands. No concerns.

### **Social/Economic**

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Well is a wildcat, until production is established no social or economic impact can be assessed.

### **Remarks or Special Concerns for this site**

Well is a wildcat 8417'MD/3786'TVD Heath Formation test.

### **Summary: Evaluation of Impacts and Cumulative effects**

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector

Date: October 14, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology GWIC website

\_\_\_\_\_  
(Name and Agency)

Petroleum County water wells

\_\_\_\_\_  
(subject discussed)

October 14, 2010

\_\_\_\_\_  
(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES

MONTANA COUNTIES, Petroleum County

(subject discussed)

October 14, 2010

\_\_\_\_\_  
(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, Section 18 T14N R29E

(subject discussed)

October 14, 2010

\_\_\_\_\_  
(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_